

Figure 1A.
Comparison of deduced amino acid sequences
of CBHs heavy chain genes with ID 1

	CDR 1										CDR 2									
	(1)	10	20	30	40	50	60	70	71		(1)	10	20	30	40	50	60	70	71	
heavy chain seq ID 1	(1)	EVQLLEQSGAEVRKPGSSVKV	SCASGGTFS	GHVTTWVROAP	PGGLEWMGESIPIFGS	ANYAQN	YAQKFRD													
CBH-4B	(1)	---ILVQSGAEVKKPGSSVKV	SCRASGGSE	FTYGIITWVROAP	PGGLEWMGGIVP	----	LFDRPNYAQK	FQD												
CBH-4D	(1)	---QVQVQSGTEVKKPGSSVKV	SCASGGPFN	---YSWVROAP	PGGLEWMGGIIT	----	FDRENYAQK	FQFQ												
CBH-4G	(1)	---QVQVQSGAEVKKPGSSVKV	SCASGGTFSN	---SASWVQAP	PGGLEWMGIIP	----	IFATTYNAQR	LQFQ												
CBH-5	(1)	---QVQLVQSGAEVKKPGSSVKV	SKATCGKFSN	---FISWVROVP	PGGLEWMGGVVP	----	VFGGGSYPQK	FQFQ												
CBH-7	(1)	---QVQLVQSGAEVRKPGS	---SVISCKS	---GGTFNNYALS	WVROAP	PGGLDWMGEITP	----	FGTEKYAQK	FQFQ											
CBH-8C	(1)	---QVQLQESGPLVKPSETLS	LTCTVSCGSISS	---FFWRIQPGK	GLEWIGYMS	----	DTGNTNSSL	TKT												
CBH-8E	(1)	---QVQVQSGAEVKKPGSSVKV	SCASGGTFNSQPI	ITWVROAP	PGGLEWMGFIP	----	IFTTNYAQK	FQFQ												
CBH-11	(1)	---QVQLVQSGAEVKKPGSSVKV	SCASCGNLTN	---IYSWVROAP	PGGLEWMG	---	FTAKS	---	QFQFQ											
CBH-17C	(1)	---EVQVEGGA	VQ---CGSLKVS	CAASGFVFGSAIH	WVROAP	---KGLD	WVGIRSS	---	SHNYATEY	PVSVRG										
Consensus	(1)	EVQLLEQSGAEVRKPGSSVKV	SCASGGTFS	GHVTTWVROAP	PGGLEWMGESIPIFGS	ANYAQN	YAQKFRD													

	CDR 3									
	(72)	72	80	90	100	110	120	130	135	
heavy chain seq ID 1	(72)	RVSILADEST	STSFIEL	SNLRSDDT	AVYYCARD	PPR	---	YCSAGRCYP	GGFFQQWQG	TLVTVSS
CBH-4B	(65)	RVATADES	---TSTAYMEL	SSLRFD	DT---AYCARE	ADI---	VVGGSSY	FDS	---	
CBH-4D	(61)	RVIMTAD	ESTIN	THYMESGL	RSEDTA	---VYYCARD	SGDFGAVI	IGNHY	Y	YGM
CBH-4G	(64)	RVTITADE	TS	---TAYMEL	SSLOSDDT	AVYYCAT	GQG	---	LELHGS	Y
CBH-5	(66)	RLITAD	DSR	-----SYML	SGRDDT	AVYYCAR	PHGD	---	SS---	GIYRRPLDY
CBH-7	(64)	RVTITADE	SN	---LMD	SSLRSEDS	---AYCARG	---	Y	YIGSE	FFDY
CBH-8C	(61)	RVIDT	SKQFS	-----LKNS	VTADT	AVYYCARG	---	LI	ARLLDYW	
CBH-8E	(64)	RLTITAD	S	---TSTGYMEL	SSLRSEDT	---AYYC	ARDWL	G	---S	CRGGSCY
CBH-11	(60)	RVTITAD	KSTGD	---Y	---MSSLK	SDDT	AVYYCAR	VEGS	---	GT---YAYFDY
CBH-17C	(63)	RFTIS	RD	DSR	---TAYL	QMN	SRTEDT	ALYCIIP	SGLVG	---
Consensus	(72)	RVSILADEST	STSFIEL	SNLRSDDT	AVYYCARD	PPR		YCSAGRCYP	GGFFQQWQG	TLVTVSS

Note:

Identical sequence: yellow background and red foreground.

Conservative sequence: light green background and blue foreground

Figure 1B.
Comparison of deduced amino acid sequences
of CBHs heavy chain genes with ID 1

CDR 1

	(1)	1	8
HCV heavy seq ID 1 CDR 1(1)	---	<u>GHVIT</u>	
CBH 4B heavy CDR 1(1)	---	<u>TYGIT</u>	
CBH 4D heavy CDR 1(1)	----	<u>YS--</u>	
CBH 4G heavy CDR 1(1)	NSAS----		
CBH 5 heavy CDR 1(1)	NFIS----		
CBH 7 heavy CDR 1(1)	---	<u>NYALS</u>	
CBH 8C heavy CDR 1(1)	---	<u>SFFW-</u>	
CBH 8E heavy CDR 1(1)	---	<u>SCFIT</u>	
CBH 11 heavy CDR 1(1)	---	<u>IYS--</u>	
CBH 17 heavy CDR 1(1)	CSA <u>TH</u> ---		
Consensus (1)		GHVIT	

CDR 2

	(1)	1	10	21
HCV heavy seq ID 1 CDR2 (1)	<u>ES</u>	<u>IF</u>	<u>IG</u>	<u>SANYACNYACKFRD</u>
CBH 4B heavy CDR 2 (1)	GIV	<u>E</u>	<u>LD</u>	<u>RENYACKFC</u> ----
CBH 4D heavy CDR 2 (1)	--GI	<u>I</u>	<u>LD</u>	<u>RENYACKFC</u> G----
CBH 4G heavy CDR 2 (1)	-I	<u>I</u>	<u>FI</u>	<u>FATTYYACRLCG</u> ----
CBH 5 heavy CDR 2 (1)	GVV	<u>E</u>	<u>VF</u>	<u>CGGSYPCKFC</u> G----
CBH 7 heavy CDR 2 (1)	-E	<u>I</u>	<u>IF</u>	<u>EGIEKYACKFC</u> G----
CBH 8C heavy CDR 2 (1)	-YMS	<u>L</u>	<u>TGN</u>	<u>INSSLKT</u> -----
CBH 8E heavy CDR 2 (1)	--FI	<u>F</u>	<u>IFT</u>	<u>TNYACKFC</u> G----
CBH 11 heavy CDR 2 (1)	-I	<u>I</u>	<u>FT</u>	<u>AKSCFC</u> G-----
CBH 17C heavy CDR 2 (1)	---	<u>IRSS</u>	<u>SHNYA</u>	<u>IEYFVSVRG</u>
Consensus (1)		ES	IF	IGSANYACNYACKFRD

CDR 3

	(1)	1	10	21
HCV heavy seq ID 1 CDR 3 (1)	---	<u>DP</u>	<u>FRYCSAGRCYPGFF</u>	<u>QC</u>
CBH 4B heavy CDR 3 (1)	----	<u>E</u>	<u>ADIVVGGSS</u>	<u>YFDS</u> ----
CBH 4D heavy CDR 3 (1)	DSG	<u>L</u>	<u>FGAVIIGNHYY</u>	<u>YGMDV</u> -
CBH 4G heavy CDR 3 (1)	-ATG	<u>CG</u>	<u>IELHGSYYY</u>	<u>YAMDV</u> -
CBH 5 heavy CDR 3 (1)	-PHG	<u>D</u>	<u>SSGIYRR</u>	<u>FLDY</u> -----
CBH 7 heavy CDR 3 (1)	-----	<u>RG</u>	<u>IYGS</u>	<u>PF</u> FDY-----
CBH 8C heavy CDR 3 (1)	-----	<u>GL</u>	<u>IAARLL</u>	<u>DY</u> W----
CBH 8E heavy CDR 3 (1)	---	<u>LW</u>	<u>LGSCRG</u>	<u>SCYSA</u> FDI-
CBH 11 heavy CDR 3 (1)	-----	<u>V</u>	<u>PGSGT</u>	<u>YAY</u> FDY-
CBH 17C heavy CDR 3 (1)	----	<u>ES</u>	<u>GLVG</u>	<u>CLGHAF</u> EP--
Consensus (1)		DP	FRYCSAGRCYPGFF	QC

Figure 2A.
Comparison of deduced amino acid sequences
of CBHs heavy chain genes with ID 2

CDR 1

CDR 2

		1	10	20	30	40	50	60	75
heavy chain seq ID 2	(1)	EVQLLECSGAEVKKPGSSVKVSCQVFGDTFSRYTICWLRCAFGCGFEWMGNIIIPVYNIF	NYAQKFQGR	ISTAD					
CBH-4B	(1)	---ILVCSGAEVKKPGSSVKVSCRASGGSFGTYGFIWVRCAFGCGLEWVGGIVELFDRE	NYAQKFQGR	V-ATAD					
CBH-4D	(1)	---QVCVCSGTEVKKPGSSVKVSCKASCGGPFN---YSWVRCAFGCGLEWVGGLI-FDRE	NYAQKFQGR	VITAD					
CBH-4G	(1)	CVCVCSGAEVKKPGSSVKVSCKASCGTFEN---SASWVRCAFGCGLEWVG-ITIFIFATI	VYAQRICGR	VITAD					
CBH-5	(1)	CVCVCSGAEVKKPGSSVKVSCKATCGKFSN-FISWVRCAFGCGLEWVGGVVFGG	GSYPCKFKGR	ITAD					
CBH-7	(1)	CVCVCSGAEVRKPGS-SVISCKS-CGTENNVALSWVRCAFGCGLDWMCETIEFGIE	KYAQKFQGR	VITAD					
CBH-8C	(1)	---QVCVCSGELVKFSETLSLTCTVSGGSISS--FFWWIRCPGKGLEWIGYMSLTGNTN	SSLRTRVIT	ISK					
CBH-8E	(1)	---QVCVCSGAEVKKPGSSVKVSCKASCGTFNSQPIWVRCAFGCGLEWVG-FIEIFTI	NYAQKFQGR	ITITTA					
CBH 11	(1)	CVCVCSGAEVKKPGSSVKVSCKASGGNIN--IYSWVRCAFGCGLEWVG-ITIEFTIAK	S---	CFQGRVITAD					
CBH-17C	(1)	---EVCVEGCAVC---GGSVKVSCASGTFVSGSATHWVRCAFGKGLDWGIRSSSHNYATEYFVSVRGRFTISRDI							
Consensus	(1)	EVQLLECSGAEVKKPGSSVKVSCQVFGDTFSRYTICWLRCAFGCGFEWMGNIIIPVYNIF	NYAQKFQGR	ISTAD					

CDR 3

		76	90	100	110	128
heavy chain seq ID 2	(75)	DSTSTAYMELSSLRSEDTAVYFCARVVIPNAIRHIMGYFDYWGQGTILVTVSS				
CBH-4B	(71)	ESTSTAYMELSSLRFDLTAYCAREADIVVGG-----SYFDS-----				
CBH-4D	(68)	ESTNTH-YMESGLRSEDTAVYFCARVSGDFA-VIIIGNHYVYGMV-----				
CBH-4G	(71)	ETS-TAYMELSSLSDDTAIYCKAT-G--QGLELHGSYYYAMDV-----				
CBH-5	(72)	DSR-----SYMISGRDDTAVYFCARPHGD-SS-GIYRRPLDY-----				
CBH-7	(71)	ESN-----LMDSSLRSEDS--AYCARG-----YIVGSPFDY-----				
CBH-8C	(68)	QFS-----LKNSVTAAETAVYFCARG-----LIAARLLDYW-----				
CBH-8E	(70)	DSTSTAYMELSSLRSEDTAVYFCARDWLGSCRG-SCYSAFDI-----				
CBH 11	(66)	KSTGD---YMSSLRSDTAVYFCARVPGS-GT-YAYFDY-----				
CBH-17C	(70)	DSR--TAYLQMSRTECTALYCIIPS-----GLVGQLGHAFEF-----				
Consensus	(76)	DSTSTAYMELSSLRSEDTAVYFCARVVIPNAIRHIMGYFDYWGQGTILVTVSS				

Note:

Identical sequence: yellow background and red foreground.
Conservative sequence: light green background and blue foreground

Figure 2B.
Comparison of deduced amino acid sequences
of CBHs heavy chain genes with ID 2

CDR 1

	(1)	1	8
HCV heavy seq ID 2 CDR 1	(1)	---	<u>RYTIQ</u>
CBH 4B heavy CDR 1	(1)	---	<u>TYGIT</u>
CBH 4D heavy CDR 1	(1)	---	<u>YS</u> ---
CBH 4G heavy CDR 1	(1)	NSAS	----
CBH 5 heavy CDR 1	(1)	NFIS	----
CBH 7 heavy CDR 1	(1)	NYALS	---
CBH 8C heavy CDR 1	(1)	-SFFW	----
CBH 8E heavy CDR 1	(1)	---	<u>SCPIT</u>
CBH 11 heavy CDR 1	(1)	---	<u>YS</u> ---
CBH 17 heavy CDR 1	(1)	GSATH	---
Consensus (1)			RYTIQ

CDR 2

	(1)	1	10	21
HCV heavy seq ID 2 CDR 2	(1)	<u>NIIFVYNIFNYACKFCG</u>	----	
CBH 4B heavy CDR 2	(1)	<u>GIVELFDRENYACKFC</u>	----	
CBH 4D heavy CDR 2	(1)	-- <u>GIIFDRENYACKFCG</u>	----	
CBH 4G heavy CDR 2	(1)	<u>TIIFIFATYYACRI</u>	<u>CG</u> ----	
CBH 5 heavy CDR 2	(1)	<u>GVVFVFGGGSYFC</u>	<u>KFCG</u> ----	
CBH 7 heavy CDR 2	(1)	<u>ETIFFGTIEKYACKFCG</u>	----	
CBH 8C heavy CDR 2	(1)	-YMSLIGNINSS	LI-----	
CBH 8E heavy CDR 2	(1)	-- <u>FIFIFTINYACKFCG</u>	----	
CBH 11 heavy CDR 2	(1)	<u>TIFFIAKSCFCG</u>	-----	
CBH 17C heavy CDR 2	(1)	---IRSSSHNY	ATFYFVSVRG	
Consensus (1)		NIIFVYNIFNYACKFCG		

CDR 3

	(1)	1	10	21
HCV heavy seq ID 2 CDR 3	(1)	---	<u>VVIFNAIRHIMGYYFLY</u>	-
CBH 4B heavy CDR3	(1)	---	EALIVVGS	---SYFLS-
CBH 4D heavy CDR 3	(1)	DSGLFGAVI	IGNHYYYGMEV	
CBH 4G heavy CDR 3	(1)	-ATGCGIELHGSYYY	YAMTV-	
CBH 5 heavy CDR 3	(1)	-----	FHGLSSGIYRRFLDY	-
CBH 7 heavy CDR 3	(1)	-----	RGYIYGSPFLDY	-
CBH 8C heavy CDR 3	(1)	-----	GLIAARLLLYW	
CBH 8E heavy CDR 3	(1)	---	DWLGSCRGGSCYSAFLI	-
CBH 11 heavy CDR 3	(1)	-----	VFGSGTYAYFLDY	-
CBH 17C heavy CDR 3	(1)	-----	PSGLVGCLGHAFEP	--
Consensus (1)			VVIFNAIRHIMGYYFLY	

Figure 3A.
Comparison of deduced amino acid sequences
of CBHs heavy chain genes with ID 3

		CDR 1										CDR 2									
	(1)	1	10	20	30	40	50	60	70	80	(1)	1	10	20	30	40	50	60	70	80	
heavy chain seq ID 3	(1)	EVCLLECSGAEVKKPGSSVKVSKASGGTFSGHVISWVRCAFGCGLEWMGGS										ISFFGTISNSACKFCG									
CBH-4B	(1)	---ILVCSGAEVKKPGSSVKVSKRASCSSGSEGTGFTWVRCAFGCGLEWMGGI										-VPLEFLRENYACKFCG									
CBH-4D	(1)	---CVCVCSGTIEVKKPGSSVKVSKASCGFFN---YSWVRCAFGCGLEWMG-G										-II-FLRENYACKFCG									
CBH-4G	(1)	---CVCVCSGAEVKKPGSSVKVSKASCGTFSN---SASWVRCAFGCGLEWMG-I										-IPIFAITTYACRLCG									
CBH-5	(1)	---CVCVCSGAEVKKPGSSVKVSKATCGKFSN---FISWVRCAFGCGLEWMGGV										-VEVFGGGSYFCCKFCG									
CBH-7	(1)	---CVCVCSGAEVKKPGSSVKVSKSCKSGTFSN---FISWVRCAFGCGLEWMG-E										-ITFFGTEKYACKFCG									
CBH-8C	(1)	---CVCVCSGAEVKKPGSSVKVSKASCGTFSN---FFWVRCAFGCGLEWMG---										-YMSDTIGNINSSSLKT									
CBH-8E	(1)	---CVCVCSGAEVKKPGSSVKVSKASCGTFSN---FISWVRCAFGCGLEWMG---										-FIFIIFTINVACKFCG									
CBH 11	(1)	---CVCVCSGAEVKKPGSSVKVSKASCGTFSN---FISWVRCAFGCGLEWMG-I										-IPIFAITTYACKFCG									
CBH-17C	(1)	---EVCVEGGAVC---GGSVKVSCASGTFSGHVISWVRCAFGCGLEWMGGS										ISFFGTISNSACKFCG									
Consensus	(1)	EVCLLECSGAEVKKPGSSVKVSKASGGTFSGHVISWVRCAFGCGLEWMGGS										ISFFGTISNSACKFCG									

	CDR 3														
	(69)	69	80	90	100	110	120	132							
heavy chain seq ID 3	(68)	RVSTTADESASTAYMELSSLRSEDTAIYYCAKDPPR---FCSSGNCYPGFFQWQGGTLVTVSS													
CBH-4B	(65)	RVATADES-TSTAYMELSSLRFDIT---AYCAREADI---VVGSSSYFDS-----													
CBH-4D	(61)	RVIMTADESINTHYMESGLRSEDTA-VYYCARDSGDFGAVIIGNHYIYGMVDV-----													
CBH-4G	(64)	RVITTADETS-TAYMELSSLSDDTAIYYCKATGQG---LELHGSYYIYAMDV-----													
CBH-5	(66)	RLITADDSR-----SYMISGRDDTAIYYCARPHGD---S---SGIYRRPLDY-----													
CBH-7	(64)	RVITTADESN---LMDSSLRSEDS---AYCARG-----YIYGSFPDY-----													
CBH-8C	(61)	RVITDTSKQFS-----LKNSTVTAADTAIYYCARG-----LIAARLLDYW-----													
CBH-8E	(64)	RLTITADS-TSTGYMELSSLRSEDTI-AYYCARDWLG---SCRGSSCYSAFDI-----													
CBH 11	(60)	RVITADKSTGD---YMSSLKSDDTAIYYCARVEGS---G---TVAYFDY-----													
CBH-17C	(63)	RFTITSRDDSR-TAYLQMNSTRDTALYCIIPSGLVG---QLGHAFEF-----													
Consensus	(69)	RVSTTADESASTAYMELSSLRSEDTAIYYCAKDPPR---FCSSGNCYPGFFQWQGGTLVTVSS													

Note:

Identical sequence: yellow background and red foreground.

Conservative sequence: light green background and blue foreground

Figure 3B.
Comparison of deduced amino acid sequences
of CBHs heavy chain genes with ID 3

CDR 1

	(1)	1	8
HCV heavy seq ID 3 CDR 1(1)		<u>CHVIS</u>	---
CBH 4B heavy CDR 1(1)		---	TYGII
CBH 4D heavy CDR 1(1)		----	YS--
CBH 4G heavy CDR 1(1)		NSAS	----
CBH 5 heavy CDR 1(1)		NFIS	----
CBH 7 heavy CDR 1(1)		NYALS	---
CBH 8C heavy CDR 1(1)		-SFFW	---
CBH 8E heavy CDR 1(1)		---	SCFII
CBH 11 heavy CDR 1(1)		---	IYS--
CBH 17 heavy CDR 1(1)		<u>CSATH</u>	---
Consensus(1)		CHVIS	

CDR 2

	(1)	1	18
HCV heavy seq ID 3 CDR 2 (1)		<u>GSISFFGTSNSA</u>	<u>CKFQG</u>
CBH 4B heavy CDR 2 (1)		<u>GIVPLFDRPNYA</u>	<u>CKFQD</u>
CBH 4D heavy CDR 2 (1)		---	GILFDRENYA
CBH 4G heavy CDR 2 (1)		---	IIPLEFATYYA
CBH 5 heavy CDR 2 (1)		<u>GVPVFVFGGGSYP</u>	<u>CKFQG</u>
CBH 7 heavy CDR 2 (1)		---	ETIPFGTEKYA
CBH 8C heavy CDR 2 (1)		---	YMSDTIGNINSS
CBH 8E heavy CDR 2 (1)		---	FIPIFITINYA
CBH 11 heavy CDR 2 (1)		-----	IIPFTAKSQFQ
CBH 17C heavy CDR 2 (1)		<u>IRSSSHNYATEYPVSVRG</u>	
Consensus (1)		GSISFFGTSNSA	CKFQG

CDR 3

	(1)	1	10	21
HCV heavy seq ID 3 CDR 3 (1)		---	<u>DFFRFCSCGCNCYFGFFCQ</u>	
CBH 4B heavy CDR3 (1)		---	EALIVVGGSSYFLS	----
CBH 4D heavy CDR 3 (1)		LSG	DFGAVIIIGNHYYYG	MTV-
CBH 4G heavy CDR 3 (1)		-ATGCGI	ELHGSYYY	YAMTV-
CBH 5 heavy CDR 3 (1)		-----	EHGDS	SGIYRRFLDY-
CBH 7 heavy CDR 3 (1)		-----	RGYIYG	SFFDY-
CBH 8C heavy CDR 3 (1)		-----	GLIAARLL	LYW
CBH 8E heavy CDR 3 (1)		---	DWLGSC	RCGSCYSAFLI-
CBH 11 heavy CDR 3 (1)		-----	VFGSGTYAY	FDY-
CBH 17C heavy CDR 3 (1)		-----	FSGLV	CQLGHAFEF-
Consensus (1)			DFFRFCSCGCNCYFGFFCQ	

Figure 4A.
Comparison of deduced amino acid sequences
of CBHs heavy chain genes with ID 4

		CDR 1										CDR 2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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heavy chain seq ID 4	(67)	R	F	I	V	S	R	D	N	S	R	D	T	V	F	L	Q	M	S	S	I	R	L	E	D	T	A	V	Y	Y	C	A	T	E	G	S	P	F	G	--	S	I	K	G	R	Y	Y	L	E	N	W	Q	G	T	L	V	T	V	S	S																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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Note:

Identical sequence: yellow background and red foreground.

Conservative sequence: light green background and blue foreground

Figure 5A.
Comparison of deduced amino acid sequences
of CBHs light chain genes with ID 5

		CDR 1										CDR 2										
	(1)	1	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200
light chain seq ID 5	(1)	-AELTQSPGTL SLSPGERATLS CRASQSVSSN--YLAWYQORPGQAPRLLIYGASSRAT																				
CBH 2 light	(1)	EIVLTQSPGTL LSPGERATLS CRASQSVLG--YLAWYQOKPGQAPRLLIYGVS-RAT																				
CBH 4 B light	(1)	--ESVTQSGT LSLSPGERATLS CRASQSVSST--YVAVYQOKPGQAPRLLIYDASIRAT																				
CBH 4 D light	(1)	-QSALTQSPASVSGSPGQSIITISCTGTSSDIGGYNFVSWYQYDPKAPV--VIYEVSKRPS																				
CBH 4 G light	(1)	DIQMTQSPSSLSASVGDRTITCRASQSIDN--FLAWYQOKPGKVEKLLIYAASSLQS																				
CBH 5 light	(1)	DIQMTQSPSTLSASG-DRVAITCRASQSSWL----AWYQOKPGAPL--LIYKASINVQD																				
CBH 7 light	(1)	DVLMTQSPSSLSASVGDRTITCRSQSISF----LNWYQOKPGKAP-LLISAASSLQS																				
CBH 8 C light	(1)	EIVLTQSPATLSLSPGERATLS CRASQSI SR--YLAWYQOKPGQAPRLLIFDTSNRAT																				
CBH 8 E light	(1)	DIQMTQSPSSLSASVGDRTITCRASQITNR--YLNWYQOKPGKAPKLLIYAASSLQS																				
CBH 11 light	(1)	DIQMTQSPSTI-SSVGDRTITCRASQINL--WLAWYQOP--KAPPELLIYKTSTSES																				
CBH 17 light	(1)	--SYVLTQTPVSVAPGKTARITCREPNIGTNS--VHWFOORPGQAFVSIYVDDR--PS																				
Consensus	(1)	AELTQSPGTL SLSPGERATLS CRASQSVSSN YLAWYQORPGQAPRLLIYGASSRAT																				

		CDR 3																				
	(60)	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260
light chain seq ID 5	(57)	GIPDRFSGSGSGTDFTLTISRLEPEDFAVYYCQLYG--NSRWTFGQGTKVEIK																				
CBH 2 light	(55)	GIPDRFSGSGSGTDFTLTISRLEPEDFAVYYCQYQY--TSPTFTG-----																				
CBH 4 B light	(55)	GV PDRFSGGSGTDFTLTISRLEPEDFAVYYCQYQY --GSPFFGG-----																				
CBH 4 D light	(57)	GVSNRFSAS-SGNTASLTISGLQAEDEADYICSSYTINNITPVIFGG-----																				
CBH 4 G light	(57)	GV PSRFSGSGSGTDFTLTIS SLOPEDVATYYCQKYN--SAPFTFGP-----																				
CBH 5 light	(52)	GV--SR PSGSGSGTFTLTIS LQPDDEATYYCQYIN--NFSGTFGQ-----																				
CBH 7 light	(55)	GV-SR PSGSGSGTFTLTIS SLOPEDFATYYCQQSY--SPLITFGG-----																				
CBH 8 C light	(57)	GIPARFSGSGSGTDFTLTISNLEPEDFAVYYCQORSNWPPALTFGG-----																				
CBH 8 E light	(55)	GV-SR FSGSGSGTDFTLTIS SLOP-DFATYYCQSFSTISAMYTFGQ-----																				
CBH 11 light	(54)	GV PSRPSGS -GSTFTLTIS SLOP-DFATYYCQHS --SSSWTFGQ-----																				
CBH 17 light	(53)	GIPERFGSA-SGDTATLTISRVEVGDEADYSCQVWNNTNNHRGSSEL-----																				
Consensus	(60)	GIPDRFSGSGSGTDFTLTISRLEPEDFAVYYCQLYG NSRWTFGQGTKVEIK																				

Note:

Identical sequence: yellow background and red foreground.
Conservative sequence: light green background and blue foreground

Figure 5B.
Comparison of deduced amino acid sequences
of CBHs light chain genes with ID 5

CDR 1

	(1)	1	14
light chain seq ID 5 CDR 1	(1)	-RASQSVSSNYLA-	
CBH 2 light CDR 1	(1)	-RASQVVLGYLA--	
CBH 4B light CDR 1	(1)	-RASQSVSSTYVA-	
CBH 4D light CDR 1	(1)	TGTSSDIGGYNFVS	
CBH 4G light CDR 1	(1)	-RASQGIDNFLA--	
CBH 5 light CDR 1	(1)	-RASQSSWLA----	
CBH 7 light CDR 1	(1)	--RSQSISSEFLN--	
CBH 8C light CDR 1	(1)	-RASQSISRYLA--	
CBH 8E light CDR 1	(1)	-RASQTINRYLN--	
CBH 11 light CDR 1	(1)	-RASQSINLWLA--	
CBH 17 light CDR 1	(1)	--REPNIQTNSVH-	
Consensus	(1)	RASQSVSSNYLA	

CDR 2

	(1)	1	9
light chain seq ID 5 CDR 2	(1)	-YGASSRAT	
CBH 2 light CDR 2	(1)	---GVSRAT	
CBH 4B light CDR 2	(1)	--DASIRAT	
CBH 4D light CDR 2	(1)	--EVSKRPS	
CBH 4G light CDR 2	(1)	--AASSLQS	
CBH 5 light CDR 1	(1)	RASQSSWLA	
CBH 7 light CDR 2	(1)	--AASSLQS	
CBH 8C light CDR 2	(1)	--DTSNRAT	
CBH 8E light CDR 2	(1)	--AASSLQS	
CBH 11 light CDR 2	(1)	--KTSTSES	
CBH 17 light CDR 2	(1)	---YDDRPS	
Consensus	(1)	YGASSRAT	

CDR 3

	(1)	1	17
light chain seq ID 5 CDR 3	(1)	--QLYGNSRWT-----	
CBH 2 light CDR 3	(1)	--QQYGTSPFFIFG----	
CBH 4B light CDR 3	(1)	--QQYGGSPFFGG----	
CBH 4D light CDR 3	(1)	SSYTNNITFVIFGG---	
CBH 4G light CDR 3	(1)	--QKYNAPFFIFGP---	
CBH 5 light CDR 3	(1)	--QYNNFSGTIFGQ----	
CBH 7 light CDR 3	(1)	--QCSYSPLLIFGG---	
CBH 8C light CDR 3	(1)	QQRSNWPPALIFGG---	
CBH 8E light CDR 3	(1)	QQSFSTSAMVIFGQ---	
CBH 11 light CDR 3	(1)	--QHYSSSWTIFGQ----	
CBH 17 light CDR 3	(1)	--QVNNNTNNHRGSSEL	
Consensus	(1)	QLYGNSRWT	

Figure 6A.
Comparison of deduced amino acid sequences
of CBHs Light chain genes with ID 6

		CDR 1										CDR 2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
		(1)	1	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400	410	420	430	440	450	460	470	480	490	500	510	520	530	540	550	560	570	580	590	600	610	620	630	640	650	660	670	680	690	700	710	720	730	740	750	760	770	780	790	800	810	820	830	840	850	860	870	880	890	900	910	920	930	940	950	960	970	980	990	1000	1010	1020	1030	1040	1050	1060	1070	1080	1090	1100	1110	1120	1130	1140	1150	1160	1170	1180	1190	1200	1210	1220	1230	1240	1250	1260	1270	1280	1290	1300	1310	1320	1330	1340	1350	1360	1370	1380	1390	1400	1410	1420	1430	1440	1450	1460	1470	1480	1490	1500	1510	1520	1530	1540	1550	1560	1570	1580	1590	1600	1610	1620	1630	1640	1650	1660	1670	1680	1690	1700	1710	1720	1730	1740	1750	1760	1770	1780	1790	1800	1810	1820	1830	1840	1850	1860	1870	1880	1890	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000	2010	2020	2030	2040	2050	2060	2070	2080	2090	2100	2110	2120	2130	2140	2150	2160	2170	2180	2190	2200	2210	2220	2230	2240	2250	2260	2270	2280	2290	2300	2310	2320	2330	2340	2350	2360	2370	2380	2390	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500	2510	2520	2530	2540	2550	2560	2570	2580	2590	2600	2610	2620	2630	2640	2650	2660	2670	2680	2690	2700	2710	2720	2730	2740	2750	2760	2770	2780	2790	2800	2810	2820	2830	2840	2850	2860	2870	2880	2890	2900	2910	2920	2930	2940	2950	2960	2970	2980	2990	3000	3010	3020	3030	3040	3050	3060	3070	3080	3090	3100	3110	3120	3130	3140	3150	3160	3170	3180	3190	3200	3210	3220	3230	3240	3250	3260	3270	3280	3290	3300	3310	3320	3330	3340	3350	3360	3370	3380	3390	3400	3410	3420	3430	3440	3450	3460	3470	3480	3490	3500	3510	3520	3530	3540	3550	3560	3570	3580	3590	3600	3610	3620	3630	3640	3650	3660	3670	3680	3690	3700	3710	3720	3730	3740	3750	3760	3770	3780	3790	3800	3810	3820	3830	3840	3850	3860	3870	3880	3890	3900	3910	3920	3930	3940	3950	3960	3970	3980	3990	4000	4010	4020	4030	4040	4050	4060	4070	4080	4090	4100	4110	4120	4130	4140	4150	4160	4170	4180	4190	4200	4210	4220	4230	4240	4250	4260	4270	4280	4290	4300	4310	4320	4330	4340	4350	4360	4370	4380	4390	4400	4410	4420	4430	4440	4450	4460	4470	4480	4490	4500	4510	4520	4530	4540	4550	4560	4570	4580	4590	4600	4610	4620	4630	4640	4650	4660	4670	4680	4690	4700	4710	4720	4730	4740	4750	4760	4770	4780	4790	4800	4810	4820	4830	4840	4850	4860	4870	4880	4890	4900	4910	4920	4930	4940	4950	4960	4970	4980	4990	5000	5010	5020	5030	5040	5050	5060	5070	5080	5090	5100	5110	5120	5130	5140	5150	5160	5170	5180	5190	5200	5210	5220	5230	5240	5250	5260	5270	5280	5290	5300	5310	5320	5330	5340	5350	5360	5370	5380	5390	5400	5410	5420	5430	5440	5450	5460	5470	5480	5490	5500	5510	5520	5530	5540	5550	5560	5570	5580	5590	5600	5610	5620	5630	5640	5650	5660	5670	5680	5690	5700	5710	5720	5730	5740	5750	5760	5770	5780	5790	5800	5810	5820	5830	5840	5850	5860	5870	5880	5890	5900	5910	5920	5930	5940	5950	5960	5970	5980	5990	6000	6010	6020	6030	6040	6050	6060	6070	6080	6090	6100	6110	6120	6130	6140	6150	6160	6170	6180	6190	6200	6210	6220	6230	6240	6250	6260	6270	6280	6290	6300	6310	6320	6330	6340	6350	6360	6370	6380	6390	6400	6410	6420	6430	6440	6450	6460	6470	6480	6490	6500	6510	6520	6530	6540	6550	6560	6570	6580	6590	6600	6610	6620	6630	6640	6650	6660	6670	6680	6690	6700	6710	6720	6730	6740	6750	6760	6770	6780	6790	6800	6810	6820	6830	6840	6850	6860	6870	6880	6890	6900	6910	6920	6930	6940	6950	6960	6970	6980	6990	7000	7010	7020	7030	7040	7050	7060	7070	7080	7090	7100	7110	7120	7130	7140	7150	7160	7170	7180	7190	7200	7210	7220	7230	7240	7250	7260	7270	7280	7290	7300	7310	7320	7330	7340	7350	7360	7370	7380	7390	7400	7410	7420	7430	7440	7450	7460	7470	7480	7490	7500	7510	7520	7530	7540	7550	7560	7570	7580	7590	7600	7610	7620	7630	7640	7650	7660	7670	7680	7690	7700	7710	7720	7730	7740	7750	7760	7770	7780	7790	7800	7810	7820	7830	7840	7850	7860	7870	7880	7890	7900	7910	7920	7930	7940	7950	7960	7970	7980	7990	8000	8010	8020	8030	8040	8050	8060	8070	8080	8090	8100	8110	8120	8130	8140	8150	8160	8170	8180	8190	8200	8210	8220	8230	8240	8250	8260	8270	8280	8290	8300	8310	8320	8330	8340	8350	8360	8370	8380	8390	8400	8410	8420	8430	8440	8450	8460	8470	8480	8490	8500	8510	8520	8530	8540	8550	8560	8570	8580	8590	8600	8610	8620	8630	8640	8650	8660	8670	8680	8690	8700	8710	8720	8730	8740	8750	8760	8770	8780	8790	8800	8810	8820	8830	8840	8850	8860	8870	8880	8890	8900	8910	8920	8930	8940	8950	8960	8970	8980	8990	9000	9010	9020	9030	9040	9050	9060	9070	9080	9090	9100	9110	9120	9130	9140	9150	9160	9170	9180	9190	9200	9210	9220	9230	9240	9250	9260	9270	9280	9290	9300	9310	9320	9330	9340	9350	9360	9370	9380	9390	9400	9410	9420	9430	9440	9450	9460	9470	9480	9490	9500	9510	9520	9530	9540	9550	9560	9570	9580	9590	9600	9610	9620	9630	9640	9650	9660	9670	9680	9690	9700	9710	9720	9730	9740	9750	9760	9770	9780	9790	9800	9810	9820	9830	9840	9850	9860	9870	9880	9890	9900	9910	9920	9930	9940	9950	9960	9970	9980	9990	10000
light chain seq ID 6	(1)	-	A	E	L	T	Q	S	P	A	T	L	S	L	S	P	G	E	R	A	T	L	S	C	R	A	S	Q	---	S	V	N	K	Y	L	A	W	Y	Q	Q	K	P	G	Q	A	P	R	L	I	Y	D	A	S	N	R	A	T																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
CBH 2 light	(1)	E	I	V	L	T	Q	S	E	G	T	L	-	L	S	P	G	E	R	A	T	L	S	C	R	A	S	Q	---	R	V	L	G	Y	L	A	W	Y	K	Q	K	P	G	Q	A	P	R	L	I	Y	G	V	S	-	R	A	T																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
CBH 4 B light	(1)	-	-	E	S	V	T	Q	S	G	T	L	S	L	S	P	G	E	R	A	T	L	S	C	R	A	S	Q	S	---	V	S	S	T	Y	V	A	W	Y	Q	Q	K	P	G	Q	A	P	R	-	L	I	Y	D	A	S	I	R	A	T																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
CBH 4 D light	(1)	-	Q	S	A	L	T	Q	P	A	S	V	S	G	S	P	G	S	I	T	I	S	C	T	G	T	S	S	D	I	G	G	Y	N	F	V	S	W	Y	Q	Y	P	D	K	A	P	V	-	V	I	T	E	V	S	K	R	P	S																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
CBH 4 G light	(1)	D	I	Q	M	T	Q	S	P	S	S	L	S	A	S	V	G	D	R	V	T	I	T	C	R	A	S	Q	---	G	I	D	N	F	L	A	W	Y	Q	Q	K	P	G	K	V	E	K	L	I	Y	A	A	S	S	I	Q	S																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
CBH 5 light	(1)	D	I	Q	M	T	Q	S	P	S	T	L	S	A	S	G	-	D	R	V	A	I	T	C	R	A	---	---	---	S	Q	S	S	W	L	A	W	Y	Q	Q	K	P	G	A	P	L	-	L	I	Y	K	A	S	N	V	Q	D																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
CBH 7 light	(1)	D	V	I	M	T	Q	S	P	S	S	L	S	A	S	V	G	D	R	V	T	I	S	C	R	S	-	Q	---	S	I	S	S	F	L	N	W	Y	Q	Q	K	P	G	K	A	P	-	L	L	I	S	A	A	S	S	I	Q	S																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
CBH 8 C light	(1)	E	I	V	L	T	Q	S	P	A	T	L	S	L	S	P	G	E	R	A	T	L	S	C	R	A	S	Q	---	S	I	S	R	Y	L	A	W	Y	Q	Q	K	P	G	Q	A	P	R	L	I	F	D	T	S	N	R	A	T																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
CBH 8 E light	(1)	D	I	Q	M	T	Q	S	P	S	S	L	S	S	V	G	-	-	D	V	T	I	T	C	R	A	S	Q	---	T	I	N	R	Y	L	N	W	Y	Q	Q	K	P	G	K	A	P	K	L	I	Y	A	A	S	S	I	Q	S																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
CBH 11 light	(1)	D	I	Q	M	T	Q	S	P	S	T	L	-	S	S	V	G	D	R	V	T	I	T	C	R	A	S	Q	---	S	I	N	L	W	L	A	W	Y	Q	Q	P	-	-	K	A	P	E	L	I	Y	K	T	S	T	S	E	S																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
CBH 17 light	(1)	-	-	S	V	L	T	Q	T	P	V	S	V	A	P	G	K	T	A	R	I	T	C	R	E	P	N	---	I	G	T	N	S	V	H	W	F	Q	Q	R	P	G	Q	A	P	V	S	I	Y	Y	D	D	R	-	-	P	S																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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Note:

Identical sequence: yellow background and red foreground.

Conservative sequence: light green background and blue foreground

Figure 6B.
Comparison of deduced amino acid sequences
of CBHs Light chain genes with ID 6

CDR 1

	(1)	1	14
light chain seq ID 6 CDR 1	(1)	<u>RASCSVNKYLA</u>	--
CBH 2 light CDR 1	(1)	<u>RASCRVLGYLA</u>	--
CBH 4B light CDR 1	(1)	<u>RASCSVSSTYVA</u>	--
CBH 4D light CDR 1	(1)	TGTSSDIGGYNFVS	
CBH 4G light CDR 1	(1)	<u>RASCGILNFLA</u>	--
CBH 5 light CDR 1	(1)	---RASCSWLA	--
CBH 7 light CDR 1	(1)	--RSCSISFLN	--
CBH 8C light CDR 1	(1)	<u>RASCSISRYLA</u>	--
CBH 8E light CDR 1	(1)	<u>RASCIINRYLN</u>	--
CBH 11 light CDR 1	(1)	<u>RASCSINLWLA</u>	--
CBH 17 light CDR 1	(1)	--REFNIGTNSVH	--
Consensus	(1)	RASCSVNKYLA	

CDR 2

	(1)	1	7
light chain seq ID 6 CDR 2	(1)	<u>LASNRAT</u>	
CBH 2 light CDR 2	(1)	-GVSRAT	
CBH 4B light CDR 2	(1)	<u>LASIRAT</u>	
CBH 4D light CDR 2	(1)	EVSKRPS	
CBH 4G light CDR 2	(1)	AASSLQS	
CBH 5 light CDR 2	(1)	KASNVQD	
CBH 7 light CDR 2	(1)	AASSLQS	
CBH 8C light CDR 2	(1)	<u>LTSNRAT</u>	
CBH 8E light CDR 2	(1)	AASSLQS	
CBH 11 light CDR 2	(1)	KTSTSES	
CBH 17 light CDR 2	(1)	-YDDRPS	
Consensus	(1)	LASNRAT	

CDR 3

	(1)	1	17
light chain seq ID 6 CDR 3	(1)	<u>QQRSDWVT</u>	-----
CBH 2 light CDR 3	(1)	--QCYGTSPFTFG	----
CBH 4B light CDR 3	(1)	---QCYGGSPFFGG	----
CBH 4D light CDR 3	(1)	SSYTNNITPVIFGG	----
CBH 4G light CDR 3	(1)	--QKYNAPFTFGP	----
CBH 5 light CDR 3	(1)	--QYNNFSGTFGQ	----
CBH 7 light CDR 3	(1)	--QCSYSPLLTFGG	----
CBH 8C light CDR 3	(1)	<u>QQRSNWPPALTFGG</u>	----
CBH 8E light CDR 3	(1)	<u>QCSFSTSAMYTFGQ</u>	----
CBH 11 light CDR 3	(1)	--QHYSSSWTFGQ	----
CBH 17 light CDR 3	(1)	--QVWNNINNHRSSEL	
Consensus	(1)	QQRSDWVT	

Figure 7A.
Comparison of deduced amino acid sequences
of CBHs Light chain genes with ID 7

	CDR 1					CDR 2
	(1)	10	20	30	40	58
light chain seq ID 7	(1)	-AELTQSPGTL	SLSPGERATLS	CGASQSVRSNY	-LAWYQOKPGQAPRLLIYGVSSRAT	
CBH 2 light	(1)	EIVLTQSPGTL	-LSPGERATLS	CRASQRVLG	--YLAWYQOKPGQAPRLLIYGVSSRAT	
CBH 4 B light	(1)	--ESVTQSGT	LSLSPGERATLS	CRASQSVSSTY	-VAWYQOKPGQAPRLLYDASIRAT	
CBH 4 D light	(1)	-QSALTQPASV	SGSPGQSITLS	CTGTSSDIGGYNFVSWYQY	PKAP-VVTIYEVS	KRPS
CBH 4 G light	(1)	DIQMTQSPSSL	SASVGDRTIT	CRASQGIDN	-F-LAWYQOKPGKVEKLLIYAASSLOS	
CBH 5 light	(1)	DIQMTQSPSSL	SASG-DRVAIT	CRASQSSWL	---AWYQOKPGAPL	-LIYKASNVQD
CBH 7 light	(1)	DVLTQSPSSL	SASVGDRTIT	CRSQSISF	--LNWYQOKPGKAP	-LLISAASSLOS
CBH 8 C light	(1)	EIVLTQSPATL	SLSPGERATLS	CRASQISIR	-Y-LAWYQOKPGQAPRLLIFDTSNRAT	
CBH 8 E light	(1)	DIQMTQSPSSL	SSVG--DVIT	CRASQTINR	-Y-LNWYQOKPGKAPKLLIYAASSLOS	
CBH 11 light	(1)	DIQMTQSPSSL	SSVGDRVTIT	CRASQINL	--WLAWYQOP--KAPPELLIYKTSTSES	
CBH 17 light	(1)	--SYVLTQTPV	SVAPGKTARIT	CREPNIGTN	--SVHWFOQRPGQAPVSIYDDR--PS	
Consensus	(1)	AELTQSPGTL	SLSPGERATLS	CGASQSVRSNY	LAWYQOKPGQAPRLLIYGVSSRAT	

	CDR 3					
	(59)	59	70	80	90	109
light chain seq ID 7	(57)	GIFLRFSGSGSGIDFTLT	II	SRLEFEDFAVYYCCQY	GSSPRTFGCGT	KLEIK
CBH 2 light	(55)	GIFLRFSGSGSGIDFTLT	II	SRLEFEDFAVYYCCQY	GISEFTFG	-----
CBH 4 B light	(55)	CVFLRFSGSGSGIDFTLT	II	SRLEFEDFAVYYCCQY	CGSEFFCG	-----
CBH 4 D light	(57)	CVSNR-FSASSCNIASLT	ISGLCAELEADY	CSSYTNNTIF	VIFCG	
CBH 4 G light	(57)	CVESRFSGSGSGIDFTLT	II	ISSIQFELVATY	YCKYN	SAFFTFGP
CBH 5 light	(52)	CV--S-RFSGSGCTFTLT	II	ISLQFEDFAVYYCCQY	NNFSGIFG	-----
CBH 7 light	(55)	CV-SRFSGSGSGCTFTLT	II	ISSIQFEDFAVYYCCQ	--SYSFILTFG	-----
CBH 8 C light	(57)	GIFARFSGSGSGIDFTLT	II	ISNLEFEDFAVYYCCQ	RSNWFALTFG	-----
CBH 8 E light	(55)	CV-SRFSGSGSGIDFTLT	II	ISSIQF-DEATY	YCCQSFSTIS	AMYTFG
CBH 11 light	(54)	CVESRFSGSGS-TEFTLT	II	ISSIQF-DEATY	YCCCHYSSSSW	TFG
CBH 17 light	(53)	GIFER-FGSASCTATLT	II	SRVEVGLEADY	SCQVWNNIN	NHRGSSEL
Consensus	(59)	GIFLRFSGSGSGIDFTLT	II	SRLEFEDFAVYYCCQY	GSSPRTFGCGT	KLEIK

Note:

Identical sequence: yellow background and red foreground.

Conservative sequence: light green background and blue foreground

Figure 7B.
Comparison of deduced amino acid sequences
of CBHs Light chain genes with ID 7

CDR 1

	(1)	1	14
light chain seq ID 7 CDR 1	(1)	<u>GASQSVRSNYLA</u>	--
CBH 2 light CDR 1	(1)	-RASQRVLGYLE	--
CBH 4B light CDR 1	(1)	<u>RASQSVSSIVVA</u>	--
CBH 4D light CDR 1	(1)	IGTSSDIGGYNEFS	
CBH 4G light CDR 1	(1)	-RASQGIDNLEA	--
CBH 5 light CDR 1	(1)	---RASQSSWLA	--
CBH 7 light CDR 1	(1)	--RSQSISSEFLN	--
CBH 8C light CDR 1	(1)	-RASQSISRYLEA	--
CBH 8E light CDR 1	(1)	-RASQTINRYLN	--
CBH 11 light CDR 1	(1)	-RASQSINLWLA	--
CBH 17 light CDR 1	(1)	--REPNIQTNSVH-	
Consensus	(1)	GASQSVRSNYLA	

CDR 2

	(1)	1	7
light chain seq ID 7 CDR 2	(1)	<u>GVSSRAT</u>	
CBH 2 light CDR 2	(1)	-GVSRAT	
CBH 4B light CDR 2	(1)	<u>DASIRAT</u>	
CBH 4D light CDR 2	(1)	EVSKEPS	
CBH 4G light CDR 2	(1)	AASSLQS	
CBH 5 light CDR 2	(1)	KASNVQD	
CBH 7 light CDR 2	(1)	AASSLQS	
CBH 8C light CDR 2	(1)	<u>DTSNRAT</u>	
CBH 8E light CDR 2	(1)	AASSLQS	
CBH 11 light CDR 2	(1)	KTSTSES	
CBH 17 light CDR 2	(1)	-YDDRPS	
Consensus	(1)	GVSSRAT	

CDR 3

	(1)	1	15
light chain seq ID 7 CDR 3	(1)	<u>CCYGSSPRT</u>	-----
CBH 2 light CDR 3	(1)	<u>CCYGTSEFT</u>	IFG----
CBH 4B light CDR 3	(1)	<u>CCYGCSEFF</u>	FGG----
CBH 4D light CDR 3	(1)	SSYTNNITFVIFGG-	
CBH 4G light CDR 3	(1)	--CKYNSAPFTFGF-	
CBH 5 light CDR 3	(1)	--CYYNFSGTIFGQ-	
CBH 7 light CDR 3	(1)	--CCSYSPLLTFGG-	
CBH 8C light CDR 3	(1)	<u>CCRSNWE</u>	FALTFGG-
CBH 8E light CDR 3	(1)	<u>CCSF</u>	STISAMYTFGQ-
CBH 11 light CDR 3	(1)	--CHYSSSSWIFGQ-	
CBH 17 light CDR 3	(1)	<u>CVWNNINNH</u>	RGSSSEL
Consensus	(1)	CCYGSSPRT	

Figure 8A.
Comparison of deduced amino acid sequences
of CBHs Light chain genes with ID 8

		CDR 1					CDR 2	
		1	10	20	30	40	50	59
light chain seq ID 8	(1)	-AELTQSPATLSVSPGERASL	SCRASQ	---	SVGNNLAWYQQKPGQAPRLLIYGGN	TRAT		
CBH 2 light	(1)	EIVLTQSPGTL	LSPGERATLS	SCRASQ	---	RVLGYLAWYKQKPGQAPRLLIYGVS	-RAT	
CBH 4 B light	(1)	--ESVTQSGTSLSPGERATLS	SCRASQS	---	VSSTYVAVYQQKPGQAPR	LLYDASIRAT		
CBH 4 D light	(1)	-QSALTQPA	SVSGSPGQSITISCTGTSSDIGGYNEFVSWYQY	PDKAPV	---	VIYEVSKRPS		
CBH 4 G light	(1)	DIQMTQSPSSLSASVGD	RVTTICRASQ	---	GIDNFLAWYQQKPGKVPKLLIYAASSLQ	S		
CBH 5 light	(1)	DIQMTQSPSTLSASG	-DRVAITCRA	---	SQSSWLAWYQQKPGAPL	-LIYKASNVQD		
CBH 7 light	(1)	DVLMTQSPSSLSASVGD	RVTTISCRS	-Q	---	SISSFLNHWYQQKPGKAP	LLISAASSLQ	
CBH 8 C light	(1)	EIVLTQSPATLSLSPGERATLS	SCRASQ	---	SISRYLAWYQQKPGQAPRLLIFDTSN	RAT		
CBH 8 E light	(1)	DIQMTQSPSSLSASVGD	RVTTICRASQ	---	TINRYLNHWYQQKPGKAPKLLIYAASSLQ	S		
CBH 11 light	(1)	DIQMTQSPSTL	-SSVGD	RVTTICRASQ	---	SINLWLAWYQQP	-KAPPELLIYKTSTSES	
CBH 17 light	(1)	--SYVLTQTPVSVAPGKTARITCREPN	---	IGTNSVHWFOQRFGQAPVSIYDDR	---	PS		
Consensus	(1)	AELTQSPATLSVSPGERASL	SCRASQ		SVGNNLAWYQQKPGQAPRLLIYGGN	TRAT		

		CDR 3									
		(60)	60	70	80	90	100	110			
light chain seq ID 8	(56)	GIFLRFSGSGSGTEFTL	TISSLCSEDFAVYFC	CHYSTWELTFGGCTKVEFK							
CBH 2 light	(55)	GIFLRFSGSGSGTDFTL	TIISRLFEDEFA	YYCCCYCTSEFTFG	-----						
CBH 4 B light	(55)	CVFLRFSGGSGTDFTL	TIISRLFEDEFAVYYCC	CYCCSEFFGG	-----						
CBH 4 D light	(57)	CVSNR-FSASSGNIASL	TIISGLCAEEDALYYCSSYINNITFVIFGG	-----							
CBH 4 G light	(57)	CVESRFSGSGSGTDFTL	TIISLQFELVATYYCC	KYNSAFFTFGP	-----						
CBH 5 light	(52)	CV--S-RFSGGSGTFTL	TIIS-LQFLDEATYYCC	YNNFSGTFGC	-----						
CBH 7 light	(55)	CV-SRFSGSGSGTFTL	TIISLQFEDATYYCC	SYSEFLTFGC	-----						
CBH 8 C light	(57)	GIFARFSGSGSGTDFTL	TIISNLEFEDEFAVYYCC	CRSNWEFALTFGG	-----						
CBH 8 E light	(55)	CV-SRFSGSGSGTDFTL	TIISLQF-DEATYYCC	CSFSTSAMVTFGC	-----						
CBH 11 light	(54)	CVESRFSGSGS	-TEFTLTIISLQF-DEATYYC	CHYSSSSWTFGC	-----						
CBH 17 light	(53)	GIFER-FGSASGLATL	TIISRVVGLAALYSC	QVWNNINNHRSSEL	----						
Consensus	(60)	GIFLRFSGSGSGTEFTL	TISSLCSEDFAVYFC	CHYSTWELTFGGCTKVEFK							

Note:

Identical sequence: yellow background and red foreground.

Conservative sequence: light green background and blue foreground

Figure 8B.
Comparison of deduced amino acid sequences
of CBHs Light chain genes with ID 8

CDR 1

	(1)	1	14
light chain seq ID 8 CDR 1	(1)	-RASQSVGNNLA--	
CBH 2 light CDR 1	(1)	-RASQRVLGYLE--	
CBH 4B light CDR 1	(1)	-RASQSVSSTYVA-	
CBH 4D light CDR 1	(1)	TGTSSTLIGGYNFVS	
CBH 4G light CDR 1	(1)	-RASQGIILNFLA--	
CBH 5 light CDR 1	(1)	-RASQSSWLA----	
CBH 7 light CDR 1	(1)	--RSCSISSEFLN--	
CBH 8C light CDR 1	(1)	-RASQSISRYLA--	
CBH 8E light CDR 1	(1)	-RASQIINRYLN--	
CBH 11 light CDR 1	(1)	-RASQSSINLWLA--	
CBH 17 light CDR 1	(1)	--REPNIQINSVH-	
Consensus	(1)	RASQSVGNNLA	

CDR 2

	(1)	1	7
light chain seq ID 8 CDR 2	(1)	GGNTRAT	
CBH 2 light CDR 2	(1)	-GVSRAT	
CBH 4B light CDR 2	(1)	DASIRAT	
CBH 4D light CDR 2	(1)	EVSKRPS	
CBH 4G light CDR 2	(1)	AASSLQS	
CBH 5 light CDR 2	(1)	KASNVQD	
CBH 7 light CDR 2	(1)	AASSLQS	
CBH 8C light CDR 2	(1)	DTSNRAT	
CBH 8E light CDR 2	(1)	AASSLQS	
CBH 11 light CDR 2	(1)	KTSTSES	
CBH 17 light CDR 2	(1)	-YDDRPS	
Consensus	(1)	GGNTRAT	

CDR 3

	(1)	1	15
light chain seq ID 8 CDR 3	(1)	CHYSTWFLT-----	
CBH 2 light CDR 3	(1)	CCYGTSEFFTFG----	
CBH 4B light CDR 3	(1)	CCYGGSEFFFGG----	
CBH 4D light CDR 3	(1)	SSYINNITFVIFGG-	
CBH 4G light CDR 3	(1)	QKYNSEFFTFGP---	
CBH 5 light CDR 3	(1)	QYNNFSGTFGQ---	
CBH 7 light CDR 3	(1)	--CCSYSPLLTFGG-	
CBH 8C light CDR 3	(1)	CCRSNWEFALTFGG-	
CBH 8E light CDR 3	(1)	CCSFSTISAMYTFGQ-	
CBH 11 light CDR 3	(1)	CHYSSSSWTFGQ---	
CBH 17 light CDR 3	(1)	QVWNNINNHRSSEL	
Consensus	(1)	CHYSTWFLT	

Figure 9A.
Comparison of deduced amino acid sequences
of ID's heavy chain genes

	CDR 1															CDR 2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
	(1)	1	10	20	30	40	50	60	71																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		

CDR region comparison between different IDs

	CDR 1				
	(1)	1	6		
HCV heavy seq ID 1 CDR 1 (1)		<u>G</u>	<u>H</u>	<u>V</u>	<u>T</u>
HCV heavy seq ID 2 CDR 1 (1)		-	<u>R</u>	<u>Y</u>	<u>T</u>
HCV heavy seq ID 3 CDR 1 (1)		<u>G</u>	<u>H</u>	<u>V</u>	<u>I</u>
HCV heavy seq ID 4 CDR 1 (1)		-	<u>T</u>	<u>Y</u>	<u>G</u>
Consensus (1)		G	H	V	T

	CDR 2				
	(1)	1	10	21	
HCV heavy seq ID 1 CDR 2 (1)		<u>E</u>	<u>S</u>	<u>I</u>	<u>P</u>
HCV heavy seq ID 2 CDR 2 (1)		<u>N</u>	<u>I</u>	<u>I</u>	<u>F</u>
HCV heavy seq ID 3 CDR 2 (1)		<u>G</u>	<u>S</u>	<u>I</u>	<u>S</u>
HCV heavy seq ID 4 CDR 2 (1)		-	<u>G</u>	<u>I</u>	<u>S</u>
Consensus (1)		E	S	I	P

	CDR 3				
	(1)	1	19		
HCV heavy seq ID 1 CDR 3 (1)		<u>D</u>	<u>P</u>	<u>P</u>	<u>R</u>
HCV heavy seq ID 2 CDR 3 (1)		-	-	<u>V</u>	<u>V</u>
HCV heavy seq ID 3 CDR 3 (1)		<u>D</u>	<u>P</u>	<u>P</u>	<u>R</u>
HCV heavy seq ID 4 CDR 3 (1)		-	-	<u>E</u>	<u>G</u>
Consensus (1)		D	P	P	R

Note:

Figure 9B.
Comparison of deduced amino acid sequences
of ID's light chain genes

		CDR 1										CDR 2				
	(1)	1	10	20	30	40	50	60	70	80	90	100	110	120	130	
light chain seq ID 5	(1)	AEL	TQSP	CTIL	SL	SFGER	ATLS	CR	AS	CS	VSS	NYL	AWY	QCF	GC	AFRLI
light chain seq ID 7	(1)	AEL	TQSP	CTIL	SL	SFGER	ATLS	CR	AS	CS	VRS	NYL	AWY	QCK	FG	CAFRLL
light chain seq ID 6	(1)	AEL	TQSP	ATIL	SL	SFGER	ATLS	CR	AS	CS	VN	-KY	LAWY	QCK	FG	CAFRLL
light chain seq ID 8	(1)	AEL	TQSP	ATIL	SV	SFGER	ASLS	CR	AS	CS	VG	-NN	LAWY	QCK	FG	CAFRLL
Consensus	(1)	AEL	TQSP	GTIL	SL	SFGER	ATLS	CR	AS	CS	VSS	NYL	AWY	QCF	GC	AFRLI

		CDR 3														
	(57)	57	60	70	80	90	100	110	120	130	140	150	160	170	180	
light chain seq ID 5	(57)	GIP	DR	FS	GS	GS	CT	DF	IL	TIS	RL	FE	FA	VY	CC	LY
light chain seq ID 7	(57)	GIP	DR	FS	GS	GS	CT	DF	IL	TIS	RL	FE	FA	VY	CC	LY
light chain seq ID 6	(56)	GIP	DR	FS	GS	GS	CT	DF	IL	TIS	RL	FE	FA	VY	CC	LY
light chain seq ID 8	(56)	GIP	DR	FS	GS	GS	CT	DF	IL	TIS	RL	FE	FA	VY	CC	LY
Consensus	(57)	GIP	DR	FS	GS	GS	CT	DF	IL	TIS	RL	FE	FA	VY	CC	LY

CDR region comparison between different IDs

	CDR 1									
	(1)	1	10	20	30	40	50	60	70	80
light chain seq ID 5 CDR 1	(1)	R	A	S	C	S	V	S	S	N
light chain seq ID 7 CDR 1	(1)	C	A	S	C	S	V	R	S	N
light chain seq ID 6 CDR 1	(1)	R	A	S	C	S	V	N	K	Y
light chain seq ID 8 CDR 1	(1)	R	A	S	C	S	V	G	N	N
Consensus	(1)	R	A	S	C	S	V	S	S	N

	CDR 2									
	(1)	1	10	20	30	40	50	60	70	80
light chain seq ID 5 CDR 2	(1)	Y	G	A	S	S	R	A	T	
light chain seq ID 6 CDR 2	(1)	-	D	A	S	N	R	A	T	
light chain seq ID 7 CDR 2	(1)	-	G	V	S	S	R	A	T	
light chain seq ID 8 CDR 2	(1)	-	G	N	I	R	A	T		
Consensus	(1)	Y	G	A	S	S	R	A	T	

	CDR 3									
	(1)	1	10	20	30	40	50	60	70	80
light chain seq ID 5 CDR 3	(1)	C	L	Y	G	N	S	R	W	I
light chain seq ID 6 CDR 3	(1)	-	-	-	C	Q	R	S	D	W
light chain seq ID 7 CDR 3	(1)	C	C	Y	G	S	S	P	R	I
light chain seq ID 8 CDR 3	(1)	-	-	-	C	H	Y	S	T	W
Consensus	(1)	C	L	Y	G	N	S	R	W	I

Note:

Identical sequence: yellow background and red foreground.

Conservative sequence: light green background and blue foreground

Identical sequence: yellow background and red foreground.
Conservative sequence: light green background and blue foreground